

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning at page 14, line 10, as follows:

Figures 9-11 show exemplary embodiments of internally insulated catalytic converter designs 90, 100, 110. Internally insulated catalytic converters are equipped with end cone assemblies 86 having an inner end cone 88 85 and/or end plate 82 connected to mat protection ring 92, which provide additional insulative properties beyond those provided by only utilizing mat support material. Mat protection ring 92 can be a formed metal hoop sized to a desired geometry required to substantially fit concentrically about catalyst substrate 10, 30, 50 and, preferably, within mat support material 70. Mat protection ring 92 can be inserted concentrically within shell 72, until fitting concentrically about catalyst substrate 10, 30, 50, between catalyst substrate 10, 30, 50 and mat support material 70. Optionally, mat protection ring 92 can penetrate the mat support material 70 a certain distance.

Please amend the paragraph beginning at page 15, line 5, as follows:

An alternative embodiment of the internally insulated catalytic converters 100, 110 can include shell 72 having one or more concentrically depressed annular areas 71 corresponding to one or more structural features, such as ridges 51, on catalyst substrates 30, 50 (See Figures 15, 17). A sizing operation can be employed to form the one or more depressed annular areas 71 about shell 72. The sizing operation optionally creates annular gap(s) 76 that can be defined between the exterior surface of the ridges 51, the interior surface of the shell, and the exposed interior edges of the mat support material 70 abutting the ridge(s). The depressed annular area 71, which can provide additional structural integrity to shell 72, preferably coincides with the ridges 51 so that the mat support material 70 maintains a uniform local mount density along the outer surface of the catalyst substrate. The depressed annular area 71 can provide yet another surface for the mat support material 70 to abut against and to increase compressive forces, enhancing

the mat support material 70's ability to reduce and prevent the axial movement of the catalyst substrate 10, 30, 50 during assembly and operation of the catalytic converter. When segmented annular ridges are utilized, the depressed annular area 71 can become an intermittently depressed annular area 71'. The intermittent depressions preferably coincide with segmented structural ridges features 31', ~~or a segmented ridges 51'~~, or, alternatively, can be disposed between segmented structural ridges features 31', ~~or segmented ridges 51'~~. (See Figure 26.)

Please amend the paragraph beginning at page 17, line 5, as follows:

In addition, an alternative embodiment of the non-internally insulated catalytic converters 130, 140 can include shell 78 having one or more concentrically formed depressed annular area(s) 84 corresponding to one or more ridges on catalyst substrate 30, 50 (See Figures 19, 21). An annular gap 85 can be defined by the exterior surface of the ridge(s), the interior surface of the shell, and the exposed interior edges of the mat support material 70 abutting the ridge(s). Depressed annular areas 84 can impart the same structural benefits to shell 78 as depressed annular area 71 ~~73~~ does to shell 72 of catalytic converters 100, 110. Alternatively, catalyst substrate 50 having segmented ridge 31' ~~51'~~, for example, can also be employed in catalytic converters 130, 140. When segmented annular ridges are utilized, the depressed annular area 84' can become similar to the intermittently depressed annular area 71'. The intermittent depressions can also coincide with ridges 31' ~~51'~~, or, alternatively, can be disposed between ridges 31' ~~51'~~, like the intermittent depressions shown in Figure 26.